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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,614	03/20/2001	Kiyofumi Takeuchi	010347	5956
23850	7590	03/21/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP			WU, SHEAN CHIU	
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SUITE 1000			PAPER NUMBER	
WASHINGTON, DC 20006			1756	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,614

Applicant(s)

TAKEUCHI ET AL.

Examiner

Shean C. Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 5-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. To clarify the elected species and the summary prosecution history of this case.

(12/04/02) Examiner sent out the Office Action about the restriction/election requirement. The claims are restricted as following:

Group 1, Claims 1-4 and 13-18 drawn to the composition comprises at least one form (I-1 to I-5).

Group 2, Claims 1 and 5-8 drawn to the composition comprises at least one form (I-1 to I-5) and at least one from component B (II-1 to II-4).

Group 3, Claims 1 and 9-12 drawn to the composition comprises at least one form (I-1 to I-5) and at least one from component C (III-1 to III-4).

Also, Examiner requested Applicants to elect a single composition (including each formula compound) comprising at least one compound selected from formulae (I-1) to (I-5).

(02/03/03) Applicants elected Group 1 without traverse. However, Applicants failed to elect a specific species.

(04/11/03) Examiner sent out the Office Action stated that applicants did not elect a single species. Therefore, applicant is required to elect a single species (a single composition including each component (A, or optionally B and C) including the specific compound(s) selected from the general formulae (I-1) to (I-5) or optionally the specific compound(s) from the general formulae (II-1) to (II-4) and (III-1) to (III-4).

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(05/12/03) Applicants elected the compound of formula (I-1) from component A not including component B and component C.

(07/30/03) Examiner again sent out another Office Action stated that Applicant's election without traverse of electing a compound of formula 1-1 was acknowledged. However, Applicants fail to provide each notation R^1 , A^{1-3} , K^{1-3} , k^{1-2} , W^{1-6} and Q^1 of formula (I-1) to meet the requirement.

(09/02/03) Applicants elected to prosecute the species in which component A in claim 1 is a compound of formula (1-1) in which:

R^1 represents a propyl group,

Q^1 represents F,

W^1 represents F,

each of W^2 to W^6 represents H,

K^1 represents a single bond,

A^1 represents a trans-1, 4-cyclohexylene, and

each of k^1 and k^2 represents 0 (therefore, there is no K^2 , K^3 , A^2 and A^3).

The above compound is specifically described in Examples 1 and 2 in the specification.

(11/18/03) Examiner issued Office Action. Claims 1-4 and 16-17 were rejected under 102(b) and claims 14 and 15 over US 5,252,253 under 103(a). The claims 1-4 and 16-17 were also rejected under 102(b) over US 6,468,607. If overcome US 6,468,607, there was

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a potential ODP (obviousness-type double patenting). Claims 5-13 were withdrawn from consideration because they are non-elected species.

(04/14/04) Applicants responded the Office Action by amending Claim 1 and stated Claims 13 and 18 were overlooked and should be examined. Claim 19 was newly added. Claim 1 was amended to the composition comprising at least two compounds selected from at least two different formulas (I-1) –(I-5), which overcame the rejections 102(b) and 103(a) over US 5,252,253. Also, the 102(b) rejection over US 6,468,607 should be applied 102(e) instead. Applicant provided verified translations of the three priority documents to overcome the 102(e) rejection.

(07/11/04) Examiner considered Claims 13 and 18. Claims 1-4 and 14-18 were rejection under 103(a) over US 5,252,253 and Claim 19 was rejected under ODP over US 6,468,607. Claim 13 was objected. The Office Action was made a final rejection.

(09/24/04) Applicants responded the final rejection with terminal disclaimer and declaration. Applicants argued that the final rejection should be withdrawn because Examiner did not examine claims 13 and 18 in the previous Office Action (11/18/03). Applicants also argued that the amended claim 1 overcomes the rejection over US 5,252,253 because the reference only reads on the compounds of the present formula (I-3). Applicants further provide the declaration to support the present claims having better

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liquid crystal properties than the reference without the CN group at terminal group attached to naphthalene core.

(10/06/04) Final rejection was withdrawn and the amendment was entered. Examiner requested Applicants elect a species comprising again because the present claims 1-18 require at least two compounds from at least two formulae (I-1) to (I-5).

(01/06/05) Applicants elected additional compound of (I-23df) of formula (II-1) with traverse without explanation. According to the description of election, the compound should be formula I-23df (wherein $W^1=F$) not formula I-23dg (wherein $W^2=F$). Claims 1-4 and 13-18 read on the election.

DETAILED ACTION

2. Applicant's election with traverse of species comprising a compound of (I-1) in the reply filed on 09/02/03 and a compound of (II-1) in the reply filed on 1/6/05 is acknowledged. The traversal is on the ground without explanation. Therefore, this is not found persuasive.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 5-12 are withdrawn from further consideration and Claims 1-4 and 13-19 read on the election. Claim 19 is still covered by the elected species (09/02/03).

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 and 16 are rejected under 35 U.S.C. 102(b)/(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Coates et al. (GB 2,271,771 or US 5,942,648).

The reference (US '648) discloses the compounds of the formula I can be used as components of liquid-crystalline media, in particular for displays based on the principle of the twisted cell, the guest-host effect, the effect of deformation of aligned phases or the effect of dynamic scattering. The reference compounds Ib-Ic, Ie-If, Ih, IJ-Im read on the present formula (I-3) and the compounds In-Iq read on the present formula (I-1). Also see the formulae I3, I5, I7, I9 and I-11 and I-38 on col. 4 read on the present formula (I-2).

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The liquid-crystalline media according to the reference preferably contain 2 to 40, in particular 4 to 30, components as further constituents besides one or more compounds according to the invention. The media according to the reference preferably contain 1 to 40%, in particular preferably 5 to 30%, of compounds according to the invention. The media preferably contain three, four or five compounds according to the invention.

The reference further teaches that the compounds of the formula I have a broad range of applications. Depending on the choice of substituents, these compounds can be used as base materials from which liquid-crystalline media are predominantly composed. It is also can add compounds of the formula I to liquid-crystalline base materials from other classes of compound in order to modify the dielectric, optical, threshold voltage, viscosity and orientation of the nematic phases. Therefore, the reference anticipates the claimed invention.

If not anticipated, it would have been obvious to those skilled in the art to admix the reference compounds of formulae Ib-Ic, Ie-If, Ih, IJ-Im with the compounds of formulae In-Iq to arrive at the claimed invention because these disclosed formulae are preferred compounds for the reference media.

7. Claims 13-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coates abovementioned.

The reference differs from the claims in that the claims have more specific requirement such as four six-membered rings for core structure and phase transition ranges (claim 13), dielectric anisotropy, birefringent index, phase transition (claim 14),

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helical pitch (claim 15), light modulation layer comprising a transparent solid substance (claim 17) and transparent solid substance formed a uniform three-dimensional network in continue layer (claim 18).

First, the four six-membered rings for core structure are disclosed on col. 4, formulae I-11 and I-38. The reference also teaches these compounds can be used as base materials from which liquid-crystalline media are predominantly composed. In order to modify the dielectric, optical, threshold voltage, viscosity and orientation of the nematic phases, it is also can add compounds of the formula I to liquid-crystalline base materials from other classes of compound. The compounds of the formula I containing branched wing groups may occasionally be of importance due to better solubility in the customary liquid-crystalline base materials, but in particular as chiral dopes if they are optically active. It is known the optically active can induce helical pitch.

The present light-control layer comprising liquid crystal composition formed a continuous layer in which the foregoing transparent solid substance forms a uniform three-dimensional network structure is well known in the art (see US 6,0106,642 and English abstract of JP 03091718). Therefore, it would have been obvious to those skilled in the art to take advantage of the reference teaching by modify the components of liquid crystal mixture according to their need to arrive at the claimed invention.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim 19 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 6,746,728. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter overlaps each other. See the present formula (I-5), which overlaps with the formula (I) of US '728.

Response to Arguments

10. Applicant's arguments filed 9/24/04, with respect to claims 1-4 and 14-19 have been fully considered and are persuasive. Therefore, the rejections over Gray et al. (US 5,252,253) and US 6,468,607 have been withdrawn. However, upon further consideration, new grounds of rejection are made in view of Coates and US 6,746,728. See sections 4-8 above.


11. It is noted that the claimed subject matter of the present invention and US 2003/0,222,244 overlaps each other. Therefore, there is a potential interference with US '244 if the present claims are found allowable.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shean C Wu
Primary Examiner
Art Unit 1756

scw